

[Translator's Note: Text is awkwardly written and seems amateurish. There is no indication of what the units are for the numbers in the examples.]

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(21)	<b>Application No.:</b>	Hei 8-238320	(71) <b>Applicant:</b>	000180645 Yoko Shiga 13-1 Midorigaoka-cho, Shizuoka-shi, Shizuoka-ken
(22)	<b>Application Date:</b>	6 August 1996	(72) <b>Inventor:</b>	Takuo Shiga 13-1 Midorigaoka-cho, Shizuoka-shi

**(54) [Title of the Invention] Cleansing Agent for Removal  
of Blood Stains****(57) [Abstract]** (containing revisions)

**[Means of Solution]** A cleansing agent that removes dried blood stains that have become attached to fibers and that are difficult to eliminate characterized in that the food product *natto* [Translator's Note: = fermented soybeans] and/or malt for food products are used.

**[Effect]** Blood stains that are stubbornly attached to fibers can beautifully be removed within the range of ordinary washing treatment time.

## [Claims]

**[Claim 1]** A cleansing agent that removes dried blood stains that have become attached to fibers and that are difficult to eliminate characterized in that the food product *natto* [Translator's note = fermented soybeans] and/or malt for food products are used.

## [Detailed Description of the Invention]

The stains that are the most difficult to remove during cleansing are dried stains that are stubbornly attached to fibers after attachment of blood. Although cleansing agents that are provided commercially are compounded with enzymes such as protease, stains involving attachment of blood are essentially not removed over time if they are not rinsed off immediately with water. An effective quantity of expensive enzyme cannot be compounded when washing is performed with a washing machine in which a large quantity of water is used. Many enzymes that can be compounded are made by culturing microorganisms, separating and extracting the enzyme that is produced so that it is not deactivated and concentrating it. For this reason, they are expensive and the life of the aqueous solution is extremely short. The concentration process and the concentrated product are highly harmful to the human body and are difficult to handle. The inventor arrived at this invention by conducting research on natural substances that do not have these drawbacks and that remove blood stains. After freeze-drying, *natto* and malt go into a state in which they are easily pulverized and can be used in food products. Anionic surfactants and calcium citrate are added to and mixed with pulverized *natto* and/or malt and a blood stain removing cleansing agent is obtained. When this product is used, a suitable quantity of water is added to make a liquid or paste which is used on stains. Blood stains are beautifully removed in approximately 30 minutes.

**[Prior Art]** Conventionally, there has been no cleansing agent for cleansing fibers to which blood stains have been attached over time. The reasons for this are that stubborn attachment of fibrin and albumin

to fibers cannot be removed by the constituents of ordinary cleansing agents, that agents made of enzymes, which are used in liquid state, are difficult to compound stably in effective concentrations and that dry enzymes are difficult to use because they are harmful to the human body.

**[Problems the Invention is Intended to Solve]** To maintain effective concentrations during use, to eliminate harmfulness to the human body during handling, to have an inexpensive product and to make stable storage possible.

**[Means for Solving the Problems]** First, a search was conducted for substances that are inexpensive and abundant sources of enzyme with *natto* and rice, wheat and bean malt for use in food products being discovered. They contain abundant and stable quantities of enzymes such as proteases, cellulase and lipase that microorganisms use to break down tissues of grains. By freeze-drying and pulverizing these enzyme products, abundant and stable raw materials for enzymes are obtained.

## [Working Examples]

1. Freeze-dried and pulverized *natto* 10 was mixed with sodium dodecyl sulfate 2, disodium citrate 0.2 and calcium citrate 0.2 to make the product. At the time of use, water 2~5 were used per this mixture 1 depending on the stain. After approximately 30 minutes even dry blood stains were removed. The efficacy of this mixture did not change over the period of one year when it was hermetically sealed and stored.
2. Freeze dried and pulverized bean malt 15 was mixed with sodium dodecyl sulfate 2, monosodium citrate 0.1 and calcium citrate 0.1 to make the product. At the time of use, water 2~10 was added to this mixture 1 to make a liquid or paste, the blood stain was immersed in it and it was allowed to stand for 30 minutes to 50 minutes. When it was rinsed with water, the stain was beautifully removed.